

# FARRAGUT STATE PARK (PWSNO 1280069) SOURCE WATER ASSESSMENT REPORT

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September 25, 2001



## State of Idaho Department of Environmental Quality

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## SOURCE WATER ASSESSMENT FOR FARRAGUT STATE PARK

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within the well recharge zone, your water quality history, construction characteristics associated with your well or wells, and site specific sensitivity factors associated with the aquifer your water is drawn from.

This report, *Source Water Assessment for Farragut State Park* describes the public drinking water source, potential contaminant sites located within in the well recharge boundaries, and the susceptibility (risk) that may be associated with any associated potential contaminants. DEQ used a refined computer model approved by the EPA to map the boundaries of the well recharge area into time of travel zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the Rathdrum Prairie Aquifer. The computer model used data assimilated by DEQ from a variety of sources including well logs in the vicinity of the Farragut State Park well.

This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Potential Contaminant Inventory.** Farragut State Park located at the southern tip of Lake Pend O'Reille near Bayview, Idaho has a non community transient water system. The well that supplies the park is in a concrete block well house on the north side of the park. The park water system is interconnected with the Bayview Water and Sewer District to supply water intermittently to Bayview.

The recharge zone for the well is a narrow corridor encompassing about 31 acres and stretching 1.2 miles eastward from the well. The recharge zone delineation is divided into 0-3, 3-6 and 6-10 year time of travel zones.

The only potential contaminant source documented inside the well recharge zone is a diesel storage tank in a concrete containment basin inside the pumphouse for Bayview Water and Sewer Well #7. The map on page 5 shows the well location, the recharge delineation and potential contaminant sites in the vicinity. Bryan Rowder of the Idaho Department of Parks and Recreation inventoried and mapped potential contaminant sites in the park.

**Water Quality History.** Farragut State Park is required to monitor quarterly for total coliform bacteria. To control bacterial contamination entering through the reservoir or the large distribution system, Farragut State Park chlorinates its water. Annual nitrate samples show concentrations ranging between 0.112 and 0.237 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l. The park water is also monitored regularly for other inorganic chemical constituents. Sodium level range between 2.9 and 3.2 mg/l. Sulphate concentrations are between 11 and 18 mg/l. Neither sodium nor sulphate is regulated

**Well Construction.** The Farragut State Park well was probably drilled in 1942 to a reported depth of 361 feet. It has a 20-inch steel casing, and produces 250 GPM. The static water level in the well is 237 feet. A sanitary survey completed April 16, 1997 makes no mention of defects in wellhead and sanitary seal maintenance. The park water system is well operated and maintained. Further details about the casing and surface seal are not known because the driller's report for the well is not on file at DEQ .

**Hydrologic Sensitivity.** Soils in the well recharge zone are generally well drained. Well-drained soils provide little protection against migration of contaminants toward the well. The soil structure above the water table in the well is unknown because the well log is not available. Unknown susceptibility parameters are scored conservatively, so the hydrologic sensitivity score for the Farragut State Park well is 6 points out of 6 points possible. However, the score is in line with scores for other wells on the Rathdrum Prairie Aquifer where the composition of the vadose zone depth to first water encountered when drilling the well and the presence or absence of an aquitard is known.

**Susceptibility to Contamination.** A susceptibility analysis DEQ conducted on the Farragut State Park well, incorporating information from the public water system file and the potential contaminant inventory, ranked the well highly susceptible to microbial contamination. The high ranking was assigned automatically because of the system's history. The well ranked moderately susceptible to all other classes of regulated contaminants, mostly because of unknown risk factors associated with the geology of the Rathdrum Prairie Aquifer. The susceptibility analysis worksheet for your well on page 6 of this report shows how your well was scored. Formulas used to compute the final susceptibility scores are as follows:

- 1)  $\text{VOC/SOC/IOC Final Score} = \text{Hydrologic Sensitivity} + \text{System Construction} + (\text{Potential Contaminant/Land Use} \times 0.20)$
- 2)  $\text{Microbial Final Score} = \text{Hydrologic Sensitivity} + \text{System Construction} + (\text{Potential Contaminant/Land Use} \times 0.35)$

**Final Susceptibility Ranking :**

- 0 - 5 Low Susceptibility
- 6 - 12 Moderate Susceptibility
- > 13 High Susceptibility

**Source Water Protection.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Farragut State Park is in the fortunate position of having jurisdiction over its entire well recharge area. Source water protection activities for the park should focus on developing a maintenance and personnel training plan to prevent contamination of the well. For example, the last sanitary survey mentioned that a hose was left attached to the well tap, a situation that could result in surface contaminants being drawn into the well and distribution system during a period of low pressure. Use and storage of herbicides, pesticides and road maintenance chemicals in the park should be reviewed for potential effects on ground water quality. Unused wells in the park that have no future use should be abandoned in accordance with Idaho Department of Water Resources standards.

The 186 public water systems in Idaho that draw water from the Rathdrum Prairie Aquifer should consider forming a regional group to represent their interests before state, county and municipal governing bodies when regulatory tools like zoning overlays, or enactment of building codes are the most appropriate ground water protection measures. The goal of source water protection is to maintain current water quality for the future despite the changes we can expect with population growth in North Idaho.

For assistance in developing source water protection strategies please contact Tony Davis at the Coeur d'Alene Regional DEQ office at 208 769-1422.

DEQ website:

<http://www.deq.state.id.us>

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3. 图 1

**Ground Water Susceptibility**

Public Water System Name : **FARRAGUT STATE PARK**  
 Public Water System Number : **1280069**

Source: **WELL #3**  
 9/25/01 10:10 P.M.

<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	PROBABLY 1942				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 1997				
Well meets IDWR construction standards	UNKNOWN	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain	YES	0			
<b>Total System Construction Score</b>		<b>3</b>			
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>6</b>			
		IOC	VOC	SOC	Microbial
<b>3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)</b>		Score	Score	Score	Score
Land Use Zone 1A	RANGELAND, WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	NO	YES
<b>Total Potential Contaminant Source/Land Use Score - Zone 1A</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE 1B (3 YR. TOT)</b>					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2 ) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - Zone 1B</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE II (6 YR. TOT)</b>					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
<b>Potential Contaminant Source / Land Use Score - Zone II</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE III (10 YR. TOT)</b>					
Contaminant Source Present	YES	0	1	1	
Sources of Class II or III leacheable contaminants or Microbials	YES	0	1	1	
Is there irrigated agricultural lands that occupy > 50% of Zone	NO	0	0	0	
<b>Total Potential Contaminant Source / Land Use Score - Zone III</b>		<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>
<b>4. Final Susceptibility Source Score</b>		<b>9</b>	<b>9</b>	<b>9</b>	<b>*High</b>
<b>5. Final Well Ranking</b>		Moderate	Moderate	Moderate	<b>*High</b>

\*High--Automatically ranked highly susceptible due to known presence of contaminant in water or contaminant source in sanitary setback zone.

## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.